

What is claimed is:

1. A chuck assembly of an etching apparatus, the chuck assembly comprising:

a chuck body comprising a stepped portion at an edge side portion of the chuck body, for supporting a central portion of a wafer;

an edge ring, received in the stepped portion of the chuck body, for supporting an edge portion of the wafer, wherein the edge ring has less resistance than the resistance of the wafer; and

an insulating ring provided at a surrounding portion of the chuck body, for supporting a bottom portion of the edge ring, the bottom portion of the edge ring being extended toward outside of the chuck body.

2. The chuck assembly of claim 1, wherein the difference in the resistance between the edge ring and the wafer is about 0.005 to about 4.5 Ω .

3. The chuck assembly of claim 1, wherein the resistance of the edge ring is about 3.5 to about 1.5 Ω .

4. The chuck assembly of claim 1, wherein the edge ring comprises a slanted step portion whose surface forms an angle of about 40 to about 80 degrees relative to a normal to the wafer surface.

5. The chuck assembly of claim 4, wherein the slanted step portion of the edge ring begins from about 1.5 to about 4.5 mm from the edge portion of the wafer.

6. The chuck assembly of claim 4, wherein the slanted step portion of the edge ring begins from about 1.5 to about 2.5 mm from the edge portion of the wafer.

7. A chuck assembly for a semiconductor etching apparatus, the chuck assembly comprises:

a chuck body for supporting a semiconductor wafer;

an edge ring, disposed on the chuck body, for supporting an edge portion of the wafer;

an insulating ring, disposed on the outside portion of the chuck body, for supporting the edge ring;

wherein the electrical resistance of the edge ring is less than the electrical resistance of the wafer so as to uniformly etch the portion of the wafer supported by the edge ring during an etch process.

8. The chuck assembly of claim 7, wherein the difference in the electrical resistance between the edge ring and the wafer is about 0.005 to about 4.5 Ω .

9. The chuck assembly of claim 7, wherein the electrical resistance of the edge ring is about 3.5 to about 1.5 Ω .

10. The chuck assembly of claim 7, wherein the edge ring comprises a slanted step portion whose surface forms an angle of about 40 to about 80 degrees relative to a normal to the wafer surface.

5 11. The chuck assembly of claim 10, wherein the slanted step portion of the edge ring begins from about 1.5 to about 4.5 mm from the edge portion of the wafer.

12. The chuck assembly of claim 10, wherein the slanted step portion of the edge ring begins from about 1.5 to about 2.5 mm from the edge portion of the wafer.